

Name: **Ahmed Mohamed Samy El-Hamaky**

No.: **2**

Task: **4**

- 10-3 Duggins Veterinary Supplies can issue perpetual preferred stock at a price of \$50 a share with an annual dividend of \$4.50 a share. Ignoring flotation costs, what is the company's cost of preferred stock,  $r_{ps}$ ?

$$r_{ps} = \text{Dividend} / \text{Net Proceed} = (4.5/50) * 100 = 9\%$$

- 10-4 Burnwood Tech plans to issue some \$60 par preferred stock with a 6% dividend. A similar stock is selling on the market for \$70. Burnwood must pay flotation costs of 5% of the issue price. What is the cost of the preferred stock?

$$\text{Dividend} = 60 * 0.06 = 3.6$$

$$\text{Net Proceed} = 70 * 0.95$$

$$\text{Cost of Preferred Stock} = (3.6/66.5) * 100 = 5.41\%$$

- 10-5 Summerdahl Resort's common stock is currently trading at \$36 a share. The stock is expected to pay a dividend of \$3.00 a share at the end of the year ( $D_1 = \$3.00$ ), and the dividend is expected to grow at a constant rate of 5% a year. What is its cost of common equity?

$$D_1 = 3.00$$

$$g = 5\%$$

$$\text{Cost of common Stock (Rs)} = ((3/36) * 100) + 5 = 8.33 + 5 = 13.33\%$$

- 10-6 Booher Book Stores has a beta of 0.8. The yield on a 3-month T-bill is 4% and the yield on a 10-year T-bond is 6%. The market risk premium is 5.5%, and the return on an average stock in the market last year was 15%. What is the estimated cost of common equity using the CAPM?

$$\text{Cost of Common Equity} = 6\% + 5.5\% * .8 = 10.4\%$$

- 10-7 Shi Importer's balance sheet shows \$300 million in debt, \$50 million in preferred stock, and \$250 million in total common equity. Shi's tax rate is 40%,  $r_d = 6\%$ ,  $r_{ps} = 5.8\%$ , and  $r_s = 12\%$ . If Shi has a target capital structure of 30% debt, 5% preferred stock, and 65% common stock, what is its WACC?

$$\text{WACC} = 30\% * 6\% * (1-40\%) + 5\% * 5.8\% + 65\% * 12\% = 9.17\%$$

- 10-8 David Ortiz Motors has a target capital structure of 40% debt and 60% equity. The yield to maturity on the company's outstanding bonds is 9%, and the company's tax rate is 40%. Ortiz's CFO has calculated the company's WACC as 9.96%. What is the company's cost of equity capital?

$$9.96\% = 40\% * 9\% * (1 - 40\%) + 60\% * \text{Cost of Equity}$$

$$\text{Cost of Equity} = 0.078 / 0.6 = 13\%$$

- 10-10** The earnings, dividends, and stock price of Shelby Inc. are expected to grow at 7% per year in the future. Shelby's common stock sells for \$23 per share, its last dividend was \$2.00, and the company will pay a dividend of \$2.14 at the end of the current year.
- Using the discounted cash flow approach, what is its cost of equity?
  - If the firm's beta is 1.6, the risk-free rate is 9%, and the expected return on the market is 13%, then what would be the firm's cost of equity based on the CAPM approach?
  - If the firm's bonds earn a return of 12%, then what would be your estimate of  $r_s$  using the over-own-bond-yield-plus-judgmental-risk-premium approach? (Hint: Use the midpoint of the risk premium range.)
  - On the basis of the results of parts a through c, what would be your estimate of Shelby's cost of equity?

a.  $D_0 = 2.00$   $D_1 = 2.14$

Cost of Equity =  $(2.14/23) + 7\% = 16.3\%$

b. Beta = 1.60 RFR = 9%  $R_m = 13\%$

Cost of Equity =  $9\% + (13\% - 9\%) * 1.6 = 15.4\%$

c.  $r_s = 12\% + (13\% - 9\%) = 16\%$

d. The cost of equity should be estimated to be about 15.9 percent, which is the average of the three methods.

- 10-11** Radon Homes' current EPS is \$6.50. It was \$4.42 five years ago. The company pays out 40% of its earnings as dividends, and the stock sells for \$36.
- Calculate the historical growth rate in earnings. (Hint: This is a 5-year growth period.)
  - Calculate the *next* expected dividend per share,  $D_1$ . (Hint:  $D_0 = 0.4(\$6.50) = \$2.60$ .) Assume that the past growth rate will continue.
  - What is Radon Homes' cost of equity,  $r_s$ ?

a.  $\$6.50 = \$4.42(1+g)^5$   
 $g = 8\%$

b.  $D_1 = D_0(1 + g) = \$2.60(1.08) = \$2.81$

c.  $r_s = D_1/P_0 + g = \$2.81/\$36.00 + 8\% = 15.81\%$

- 10-12** Spencer Supplies' stock is currently selling for \$60 a share. The firm is expected to earn \$5.40 per share this year and to pay a year-end dividend of \$3.60.
- If investors require a 9% return, what rate of growth must be expected for Spencer?
  - If Spencer reinvests earnings in projects with average returns equal to the stock's expected rate of return, then what will be next year's EPS? (Hint:  $g = ROE \times \text{Retention ratio}$ .)

a.  $r_s = D_1/P_0 + g$   $0.09 = 3.6/60 + g$   
 $g = 3\%$

b. Retained earnings = EPS - Dividends =  $5.4 - 3.6 = 1.8$   
Next year's EPS = Current Year EPS + Increase in Retained earnings =  $5.4 + 1.8 * 9\% = \$5.562$

- 10-13** Messman Manufacturing will issue common stock to the public for \$30. The expected dividend and the growth in dividends are \$3.00 per share and 5%, respectively. If the flotation cost is 10% of the issue's gross proceeds, what is the cost of external equity,  $r_e$ ?

$$\text{Cost of Equity} = 3/(30 \cdot .9) + 5\% = 16.11\%$$

- 10-14** Suppose a company will issue new 20-year debt with a par value of \$1,000 and a coupon rate of 9%, paid annually. The tax rate is 40%. If the flotation cost is 2% of the issue proceeds, then what is the after-tax cost of debt? Disregard the tax shield from the amortization of flotation costs.

We need to calculate the interest of the debt

$$PV = 1000 \cdot 0.98 = \$980$$

$$\text{Coupon} = 1000 \cdot .09 = \$90$$

$$980 = \frac{90}{(1+r)^1} + \frac{90}{(1+r)^2} + \dots + \frac{90}{(1+r)^{20}} + \frac{1000}{(1+r)^{20}}$$

$$\text{The Cost of Debt after Tax} = (1-40\%) \cdot r$$





